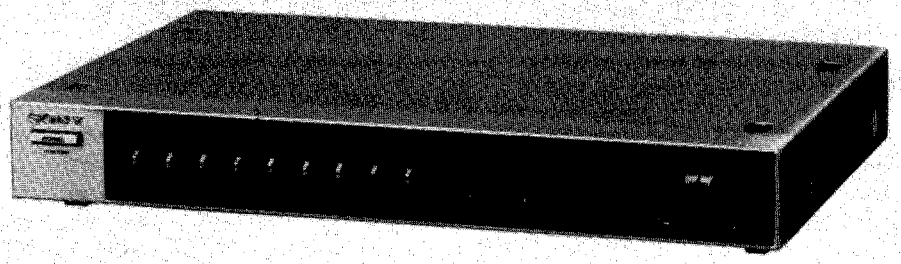
SEH-V5

US Model
Canadian Model
AEP Model
UK Model
E Model



GRAPHIC EQUALIZER

SPECIFICATIONS

System	Equalizer: NF system
Power requirement	US, Canadian model: 120 V ac, 60 Hz AEP model: 220 V ac, 50/60 Hz UK model: 240 V ac, 50 Hz E model: 110 – 120 or 220 – 240 V ac, adjustable, 50/60 Hz
Power consumption	US, Canadian model: 5 W AEP model: 6 W UK, E model: 7 W
AC outlet	US, Canadian, AEP, E model: 100 W unswitched UK model: 100 W switched
Inputs	LINE IN (phono type) 245 mV (–10 dBs)/ 50 k ohms TAPE 1, 2 (phono type) 245 mV (–10 dBs)/ 50 k ohms MIC (phono type, front) 1.95 mV (–52 dBs)/for low impedance microphone
Outputs	LINE OUT (phono type) 245 mV (–10 dBs) TAPE 1, 2 (phono type) 245 mV (–10 dBs) Load impedance more than 10 kohms

0 dBs = 0.775 V

– Continued on page 2 –

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

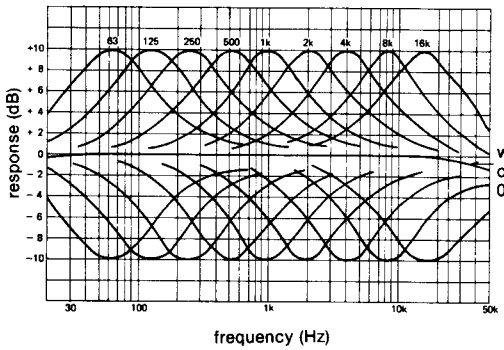
MICROFILM

SONY®
SERVICE MANUAL

SEH-V5

Graphic equalizer	Boost/cut range: ±10 dB Center frequencies: 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1 kHz, 2 kHz, 4 kHz, 8 kHz, 16 kHz
Frequency response	MIC 100 Hz – 10 kHz $^{+0}_{-3}$ dB LINE 20 Hz – 30 kHz $^{+0}_{-1.5}$ dB
Distortion	MIC Less than 0.15% LINE Less than 0.05%
Signal-to-noise ratio	MIC More than 65 dB (IHF-A) LINE More than 85 dB (IHF-A)
Dimensions	AEP model: Approx. 355 x 55 x 260 mm (w/h/d) (14 x 2 1/4 x 10 1/4 inches) US, Canadian, UK, E model: Approx. 355 x 55 x 250 mm (w/h/d) (14 x 2 1/4 x 9 7/8 inches) including projecting parts and controls
Weight	Approx. 2.3 kg (5 lbs 1 oz), net Approx. 2.7 kg (5 lbs 15 oz), in shipping carton

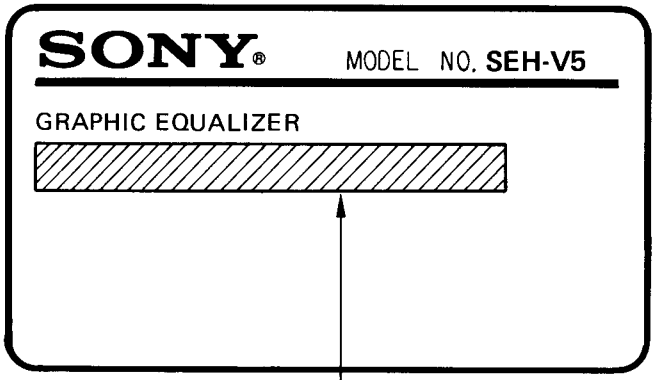
Equalization characteristics



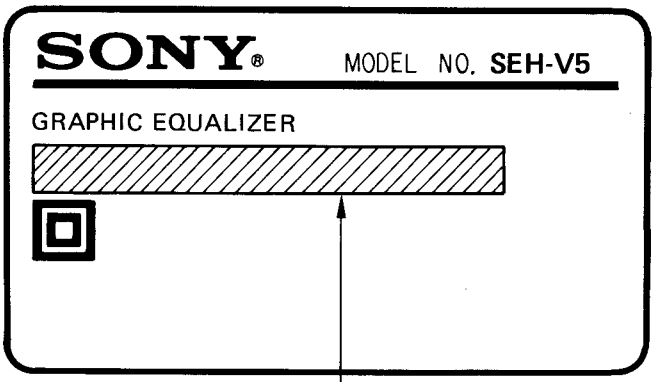
with the equalizer controls set to 0 position

MODEL IDENTIFICATION

– Specification Label –



US, Canadian model: AC 120 V 60 Hz 5 W



AEP model: AC 220 V ~ 50/60 Hz 6 W
UK model: AC 240 V ~ 50/60 Hz 7 W
E model: AC 110 – 120, 220 – 240 V ~ 50/60 Hz 7 W

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

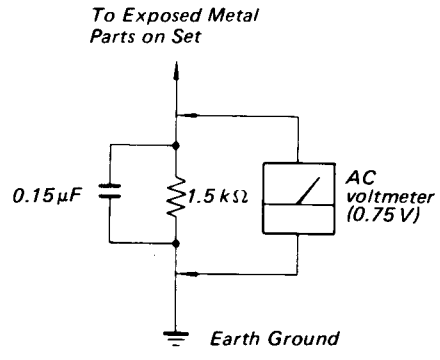
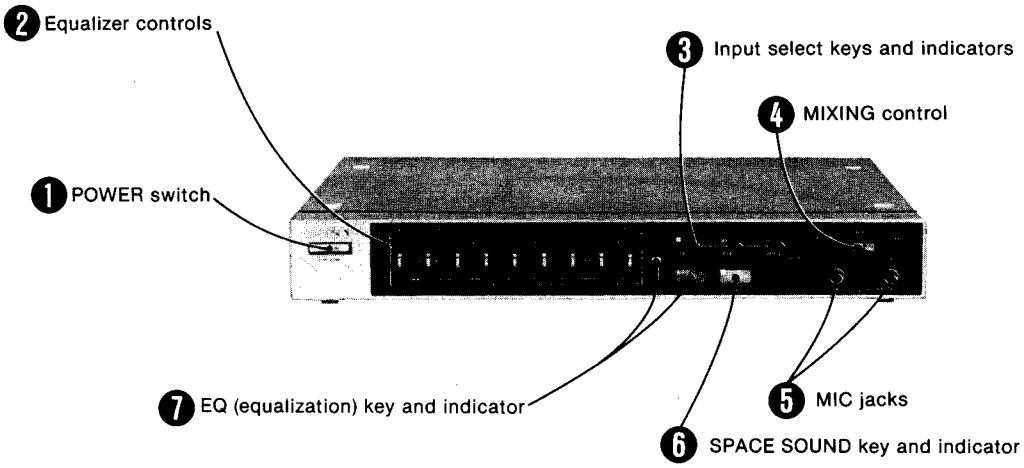


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
OUTLINE

1-1. LOCATION AND FUNCTION OF CONTROLS

The numbers in the photo are keyed to the text.


2 Equalizer controls
3 Input select keys and indicators
4 MIXING control
1 POWER switch
7 EQ (equalization) key and indicator
5 MIC jacks
6 SPACE SOUND key and indicator

❶ POWER switch
Depress to turn on the power.
To turn the power off, press the switch again.

❷ Equalizer controls
Slide upwards or downwards to equalize the signal selected by the input select key.

❸ Input select keys and indicators
Press one of these keys to select the input source to equalize or to listen to. The indicator in the pressed key will light up.
LINE: For playback output from the turntable, CD (compact disc) player or tuner connected to the amplifier.
TAPE 1: For playback output from the tape deck connected to the TAPE RECORDER 1 TAPE jacks.
TAPE 2: For playback output from the tape deck connected to the TAPE RECORDER 2 TAPE jacks.
When the power is turned on, the last input source selected before the power was turned off will be automatically selected.
If the power is kept off more than a week, no indicator may light up. In this case, press the desired key.

❹ MIXING control
Adjusts the balance between the volume of the microphone and the program source. Slide the control to MIC for more microphone volume and less source volume, and vice versa. When a microphone is not connected, the setting of this control has no effect on the program source's volume.
Also in the following cases, even when microphone(s) is(are) connected, this control has no effect on the microphone's volume.
- TAPE 2 is selected with the input select key when no tape deck is connected to the TAPE 2 jacks.
- LINE is selected with the input select key but the selected input source with the amplifier's input select key is not connected to the amplifier.

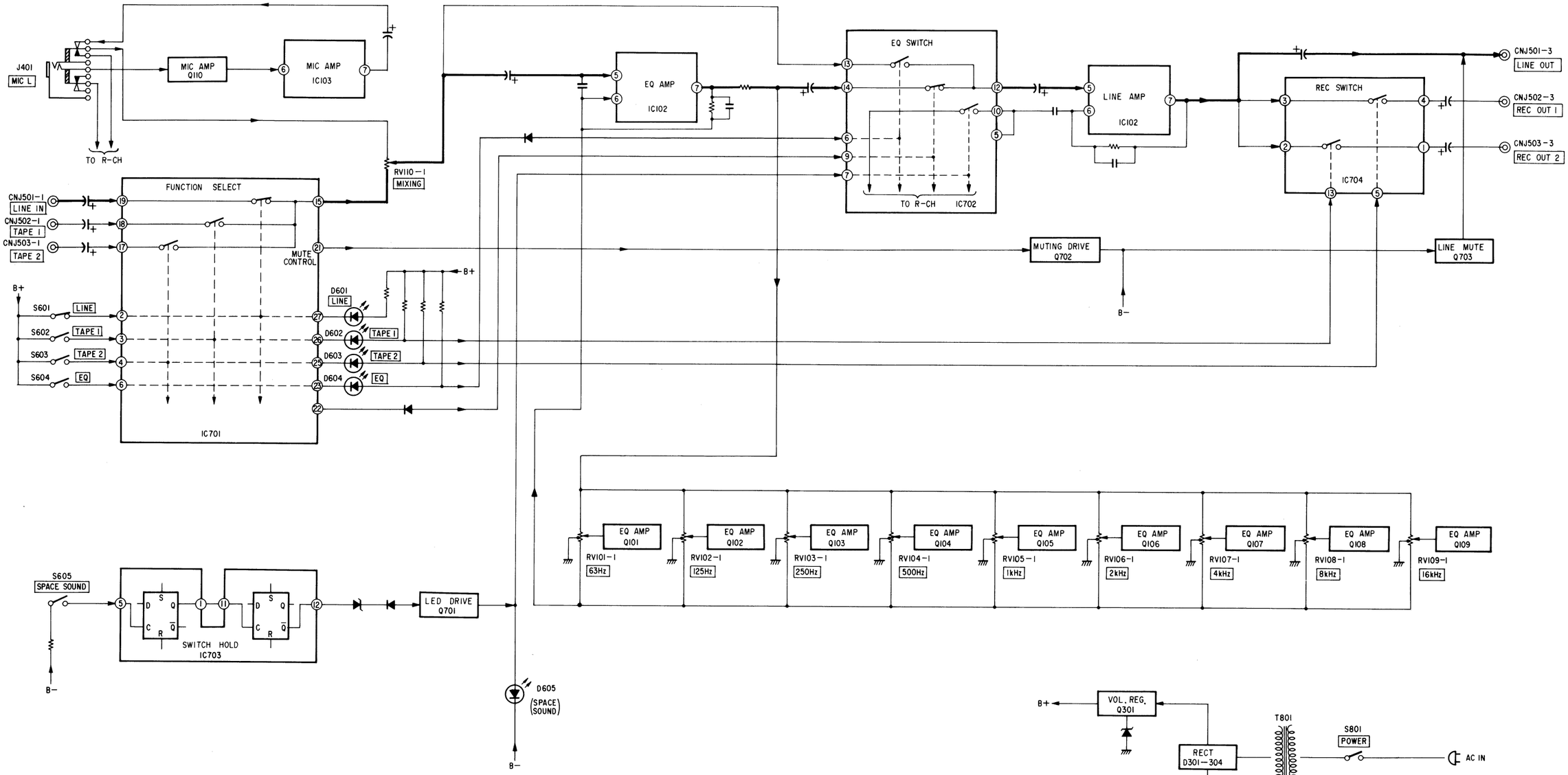
❺ MIC jacks
These jacks accept microphones equipped with a phone plug.
When connecting two microphones (or a one-point stereo microphone) to both L and R MIC jacks, mixing is done in stereo.
When connecting a microphone to either one of the MIC jacks, monaural sound results.

❻ SPACE SOUND key and indicator
Press this key to give the effect of a more expansive, surrounding sound. This key is useful when the speakers are placed too close together or your listening room is small and diminishes the stereo sound stage.

❼ EQ (equalization) key and indicator
Press this key to add the set equalization values. The associated indicator will light up.
To cut equalization, press the key again (indicator off). The equalizer circuit is bypassed and you can monitor the non-equalized original sound. This key allows you to compare the equalized sound with the original sound.

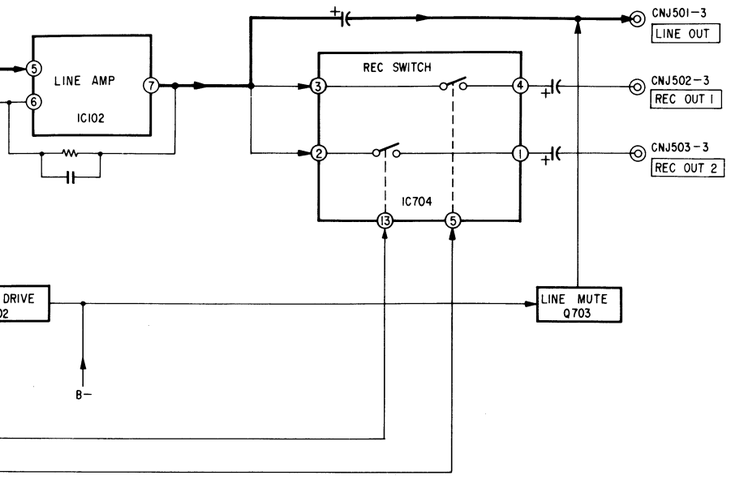
1-2. BLOCK DIAGRAM

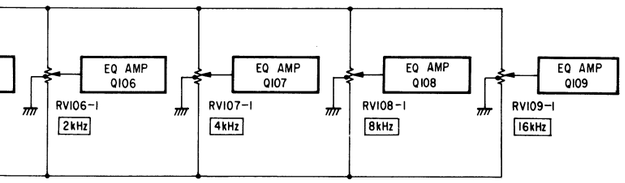
– L-CH –

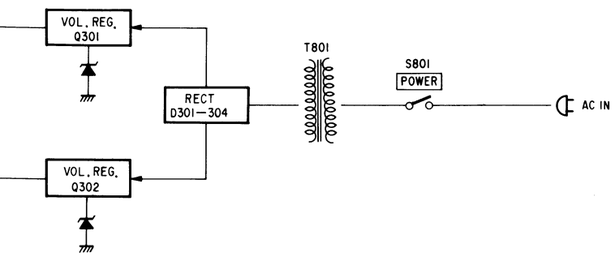


– R-CH –

- SAME AS L-CH







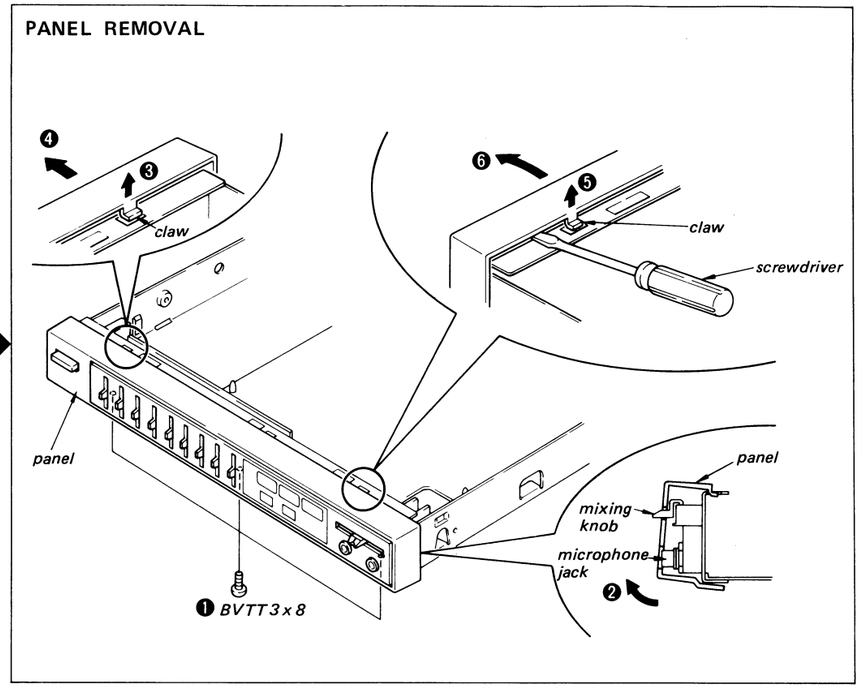
SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

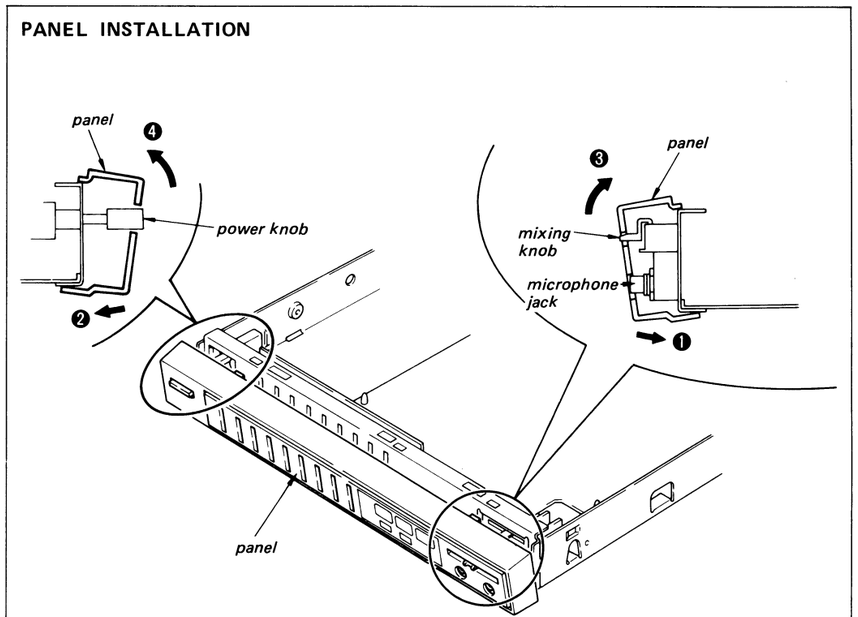
Remove the panel.
four screws
(BVTT 3 x 8)

Main board

PANEL REMOVAL

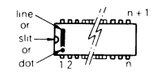


PANEL INSTALLATION



- **Semiconductor Lead Layouts.**

CX-770A
LC4066BH
LC7815H
μPC4557C
μPD4013BC



2SD773

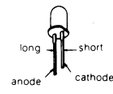
2SC1637-1

1S1555
10E-2
RD3.0E-L1
RD3.6E-L1
RD9.1E
RD10E-L2

2SA1015
2SB739
2SC1345

2SC2458

GL-5HY22
GL-5PG21



3-1. MOUNTING DIAGRAM

Note: See page 8 for semiconductor lead layouts.

D	Q , IC
702	
703 705	
	IC703, IC702 IC704
	IC701 702
704, 701, 707 706	704
701	703
	302
301, 302, 303 304	
	IC103 IC101 IC102
306 305	
	301
	110, 210
605	
604	
601, 602, 603	
	Q201 — 209 Q101 — 109
D	Q , IC

Note:

- ■ : part mounted on the conductor side.
- ▒ : B + pattern
- ●—▶— : signal path
- ●—▶— : L-CH signal path
- ●—▶— : R-CH signal path

[PIN JACK BOARD]

[MAIN BOARD]

[SWITCH BOARD]

[MIX VOL BOARD]

[MIC 1 BOARD]

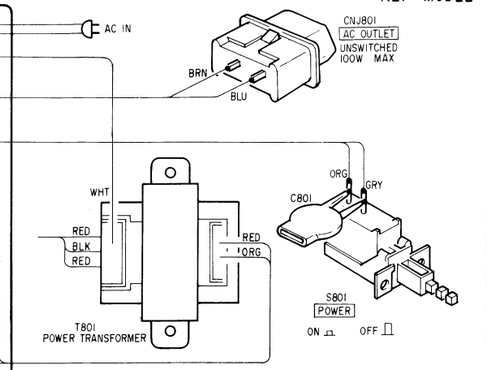
[MIC 2 BOARD]

[EQ VOL BOARD]

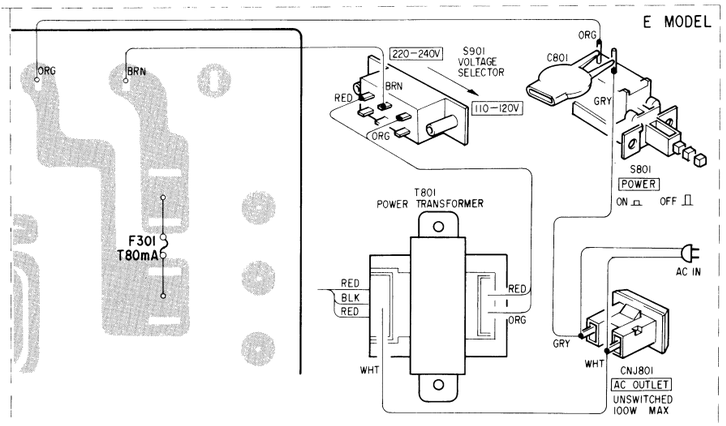
K L M N O P Q R S T U V W X Y Z A1

1 2 3 4 5 6 7 8 9 10

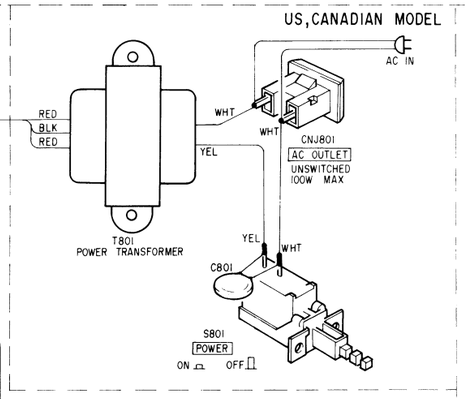
AEP MODEL



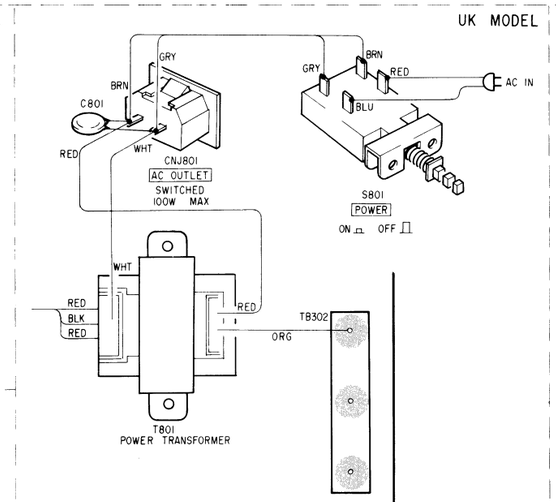
E MODEL



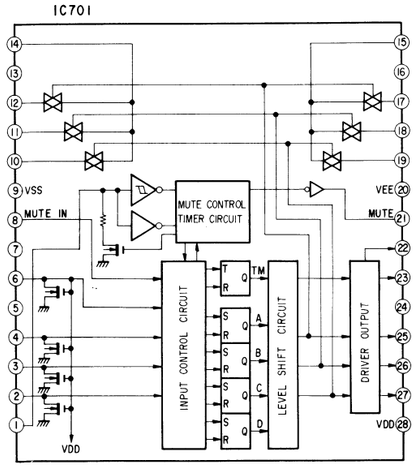
US,CANADIAN MODEL



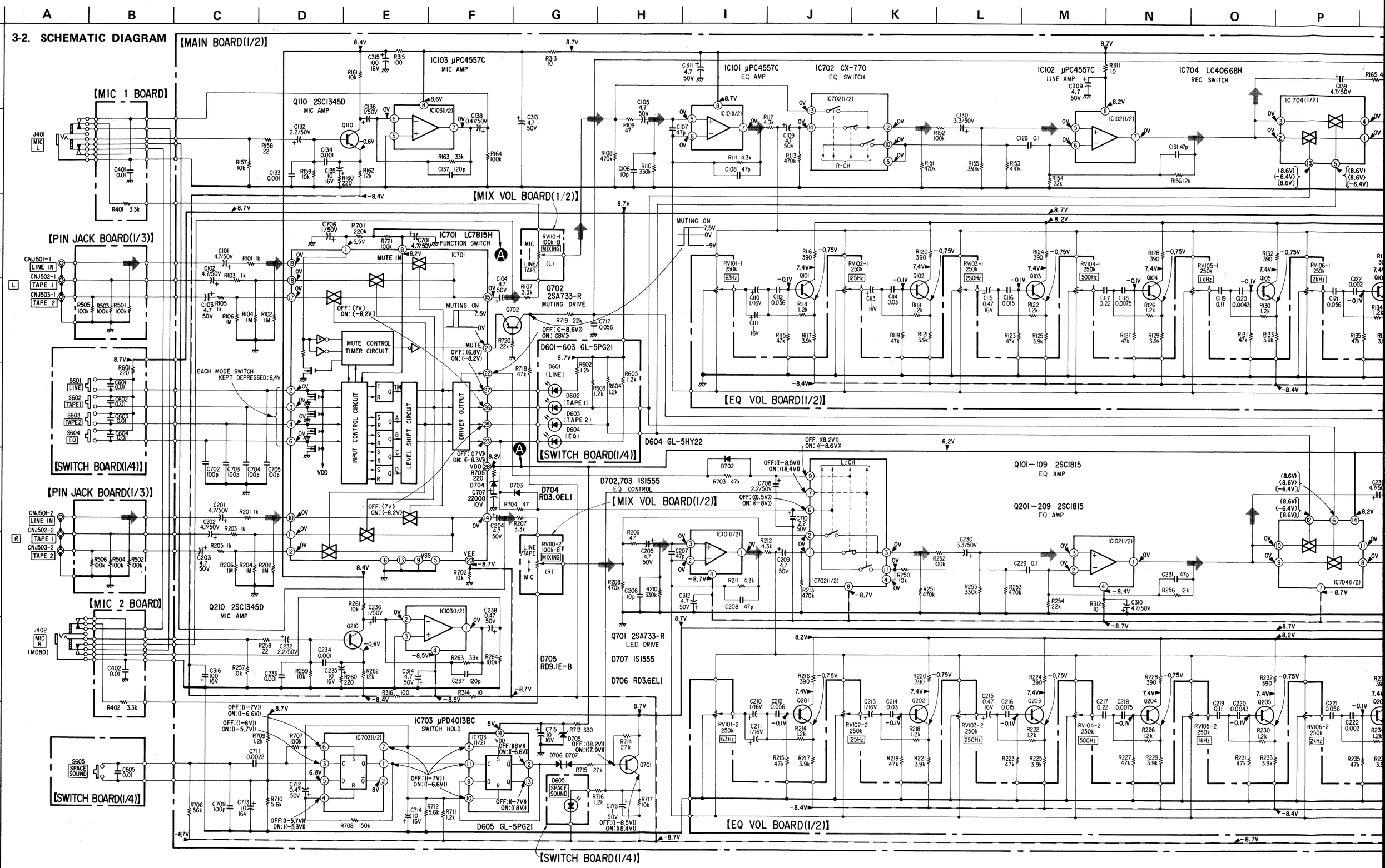
UK MODEL

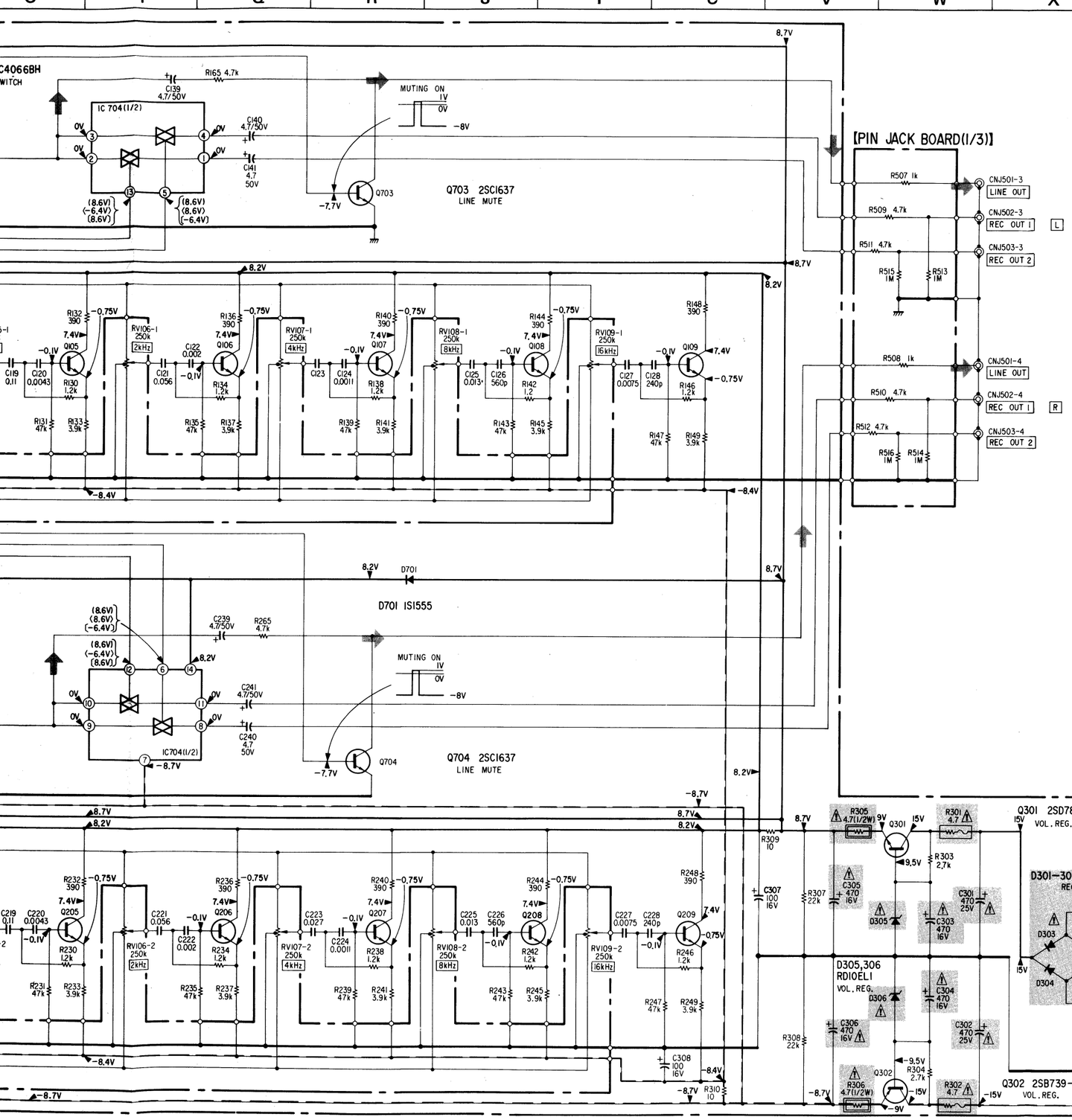


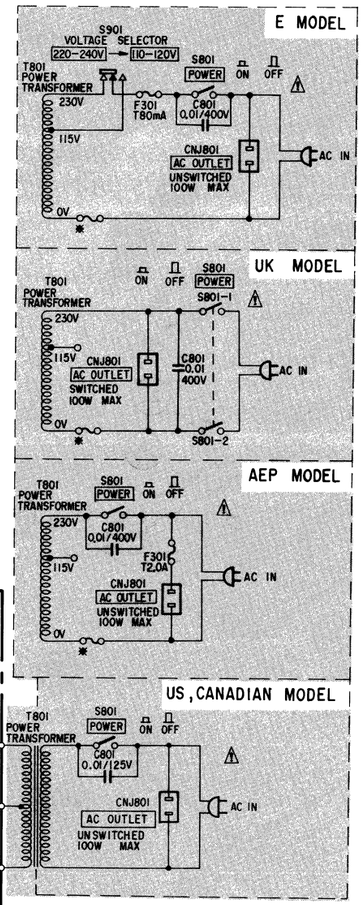
IC701



3-2. SCHEMATIC DIAGRAM


[MAIN BOARD(1/2)]
[MIC 1 BOARD]
[PIN JACK BOARD(1/3)]
[MIC 2 BOARD]
[SWITCH BOARD(1/4)]
[MIX VOL BOARD(1/2)]
[EQ VOL BOARD(1/2)]
IC103 μPC4557C MIC AMP
IC101 μPC4557C EQ AMP
IC702 CX-770 EQ SWITCH
IC102 μPC4557C LINE AMP
IC704 LC4066BH REC SWITCH
IC701 LC7815H FUNCTION SWITCH
Q110 2SC1345D MIC AMP
Q210 2SC1345D MIC AMP
Q702 2SA733-R MUTING DRIVE
Q701 2SA733-R LED DRIVE
Q101—109 2SC1815 EQ AMP
Q201—209 2SC1815 EQ AMP
D702,703 1S1555 EQ CONTROL
D704 RD3.0ELI
D705 RD9.1E-B
D706 RD3.6ELI
D707 1S1555
D601—603 GL-5PG21
D604 GL-5HY22
D605 GL-5PG21
IC703 μPD4013BC SWITCH HOLD
MUTE IN
MUTE CONTROL TIMER CIRCUIT
INPUT CONTROL CIRCUIT
LEVEL SHIFT CIRCUIT
DRIVER OUTPUT
EACH MODE SWITCH KEPT DEPRESSED: 8.4V
MUTING ON
L-CH
R-CH
J401 MIC L
J402 MIC R (MONO)
CNJ501-1 LINE IN
CNJ502-1 TAPE 1
CNJ503-1 TAPE 2
CNJ501-2 LINE IN
CNJ502-2 TAPE 1
CNJ503-2 TAPE 2
S601 LINE
S602 TAPE1
S603 TAPE2
S604 EQ
S605 SPACE SOUND
D601 (LINE)
D602 (TAPE 1)
D603 (TAPE 2)
D604 (EQ)
D605 (SPACE SOUND)
RV101-1 250k 63Hz
RV102-1 250k 125Hz
RV103-1 250k 250Hz
RV104-1 250k 500Hz
RV105-1 250k 1kHz
RV106-1 250k 2kHz
RV101-2 250k 63Hz
RV102-2 250k 125Hz
RV103-2 250k 250Hz
RV104-2 250k 500Hz
RV105-2 250k 1kHz
RV106-2 250k 2kHz
RV110-1 100k-B MIXING
RV110-2 100k-B MIXING
8.4V
8.7V
8.6V
8.2V
-8.4V
-8.7V
-8.5V
-7.5V
-9V
0V
-0.6V
-0.1V
-0.75V
7.4V
6.8V
5.5V
OFF: (7V) ON: (-8.2V)
OFF: ((-8.2V)) ON: ((8.4V))
OFF: ((8.2V)) ON: ((-8.6V))
OFF: ((-7V)) ON: ((-6.6V))
OFF: ((-6V)) ON: ((-5.7V))
OFF: ((-5.7V)) ON: ((-5.3V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((6.5V)) ON: ((-8V))
OFF: ((8.2V)) ON: ((7.9V))
OFF: ((-7V)) ON: ((8V))
OFF: ((-8.2V)) ON: ((8V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((-7V)) ON: ((8V))
OFF: ((-8.6V)) ON: ((8V))
OFF: ((-7V)) ON: ((-6.6V))
OFF: ((-7V)) ON: ((-8.3V))
OFF: (6.8V) ON: (-8.2V)
OFF: ((-8.6V)) ON: ((8V))
OFF: (7V) ON: (-8.2V)
OFF: (6.5V) ON: (-8V)
OFF: ((8.2V)) ON: ((-8.6V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((-8.2V)) ON: ((8.4V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((-8.5V)) ON: ((8.4V))
OFF: ((-8.5





* NOT REPLACEABLE : BUILT IN TRANSFORMER.

Note:

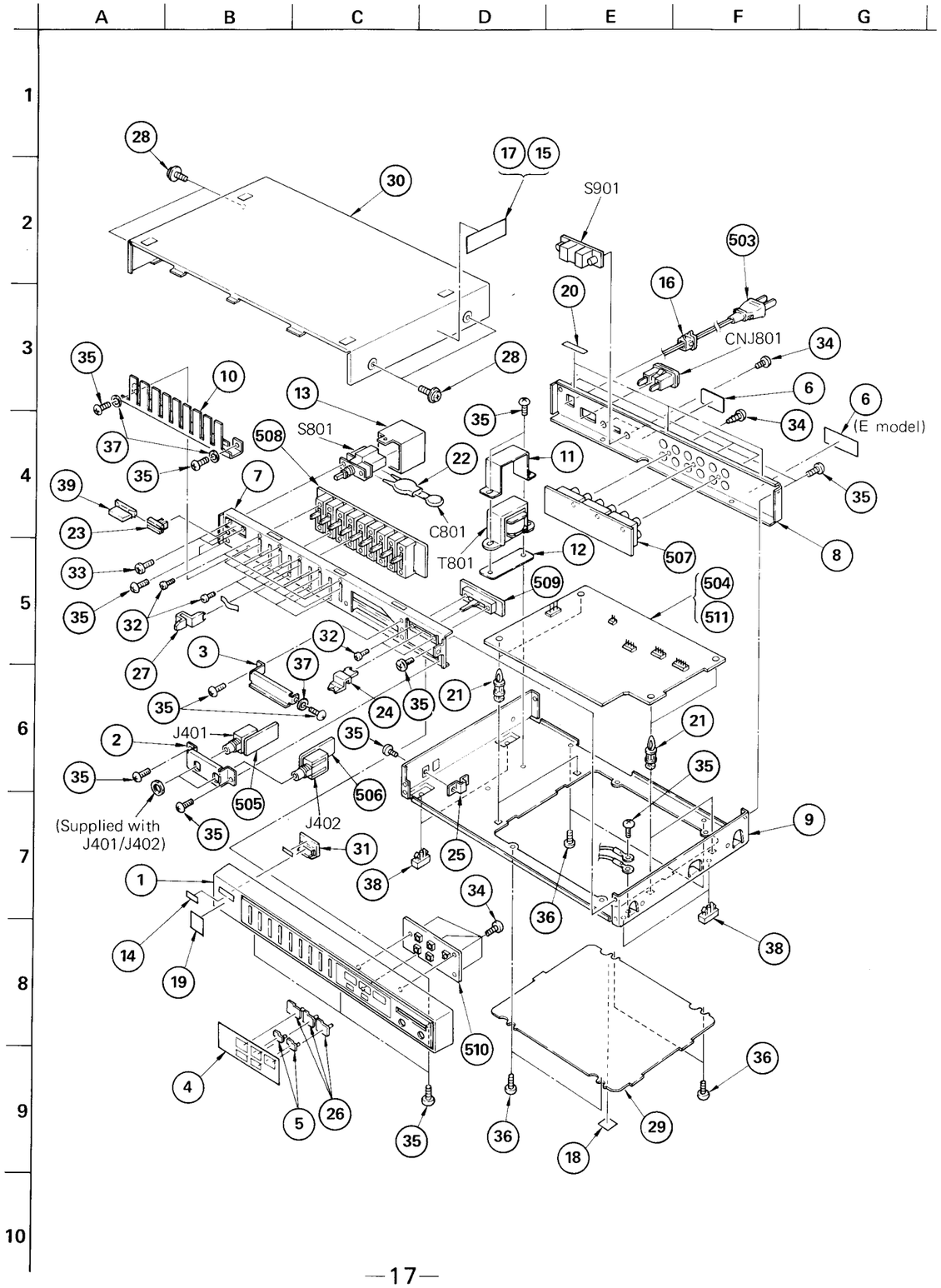
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- ——— : B+ bus.
- - - - : B- bus.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  ( ) : LINE
  [ ] : TAPE 1
  < > : TAPE 2
  ≪ ≫ : EQ
  (( )) : SPACE SOUND
  No mark: POWER ON
- : signal path

Note: Voltages are measured with a VOM (50kΩ/V).

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 4
EXPLODED VIEW AND PARTS LIST



GENERAL SECTION

No.	Part No.	Description
1	2-378-901-00	PANEL
2 ♦	2-378-902-00	BRACKET, JACK
3	2-378-903-00	PLATE (A), BLIND
4	2-378-904-00	SHEET, FUNCTION
5 ♦	2-378-905-00	KNOB, TACT
6	2-378-907-00	LABEL, MODEL NUMBER (UK)
6	2-378-908-00	LABEL, MODEL NUMBER (AEP)
6	2-378-909-00	LABEL, MODEL NUMBER (E1/E2)
6	2-378-910-00	LABEL, MODEL NUMBER (U/CND)
7 ♦	2-378-911-00	PANEL, SUB
8 ♦	2-378-912-11	(US,Canadian)...PLATE, JACK
8 ♦	2-378-913-00	(AEP).....PLATE, JACK
8 ♦	2-378-914-00	(UK).....PLATE, JACK
8 ♦	2-378-915-00	(E).....PLATE, JACK
9 ♦	2-378-916-00	CHASSIS
10	2-378-917-00	PLATE (B), BLIND
11 ♦	2-378-921-00	PLATE (A), SHIELD
12 ♦	2-378-922-00	PLATE (B), SHIELD
13	3-559-001-00	(UK)....COVER, POWER SWITCH
14 ♦	3-701-690-00	(UK)....LABEL (MADE IN JAPAN)
15 ♦	3-703-043-21	(Canadian,UK)...LABEL, CAUTION, MAIN
16 ⚠	3-703-244-00	BUSHING, CORD
17 ♦	3-703-678-00	(US).....LABEL, CAUTION, NEW UL
18 ♦	3-703-680-00	(US).....LABEL, CAUTION, SUB, NEW UL
19	3-703-710-01	(US,Canadian,AEP,E)...STICKER, SONY SYMBOL (12)
19	3-703-713-01	(UK).....STICKER, SONY SYMBOL (10)
20	3-831-441-XX	CUSHION, 23X4X0.5
21 ♦	4-309-357-00	SUPPORT, PC
22	4-875-455-01	(AEP,E)...COVER (DIA.20), CAPACITOR
23	4-875-466-00	JOINT (F2), KNOB
24	4-884-829-00	KNOB, SLIDE CONTROL
25 ♦	4-886-809-00	(AEP)....SUPPORT
26 ♦	4-886-810-00	PUSH BLOCK (Z)
27	4-886-818-12	KNOB, SLIDE CONTROL
28	4-886-821-01	SCREW, M3 CASE
29 ♦	4-886-844-01	PLATE, BOTTOM
30	4-886-845-11	CASE
31	4-886-976-00	ESCUTCHEON, POWER KNOB
32	7-621-255-15	SCREW +P 2X3
33	7-682-146-01	SCREW +P 3X5
34	7-685-646-11	SCREW +BVTP 3X8 TYPE2 N-S
35	7-685-871-01	SCREW +BVTT 3X6 (S)
36	7-685-872-01	SCREW +BVTT 3X8 (S)
37	7-688-003-11	W 3, MIDDLE
38	X-4886-405-1	FOOT ASSY
39	X-4886-903-0	KNOB (L.S) ASSY, POWER

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
71 ⚠	1-526-565-00	(E1)...AC PLUG ADAPTOR
72	1-556-793-00	CORD, CONNECTION
73	2-378-920-00	INDIVIDUAL CARTON
74	3-701-630-00	BAG, POLYETHYLENE
75	3-701-684-11	(E)....CARD, INDICATING
76	3-773-326-11	(AEP,UK,E).....MANUAL, INSTRUCTION
77	3-773-326-21	(US,Canadian)...MANUAL, INSTRUCTION
78	3-773-326-41	(AEP).....MANUAL, INSTRUCTION
79 ♦	4-875-574-00	SHEET, PROTECTION
80	4-809-251-00	(US)...BAG, POLYETHYLENE
81	4-886-997-00	CUSHION (RIGHT-E), UPPER
82	4-886-998-00	CUSHION (LEFT-E), UPPER
83	4-886-999-00	CUSHION (RIGHT-E), LOWER
84	4-888-201-00	CUSHION (LEFT-E), LOWER

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NSTRUCTION
NSTRUCTION
NSTRUCTION

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	1-533-131-00	(AEP,E)....HOLDER, FUSE			
502 ♦	;1-535-416-00	(AEP,E)....TERMINAL			
503 ⚠	.1-551-427-11	(AEP).....CORD, POWER, EULO PLUG			
503 ⚠	.1-551-479-00	(E).....CORD, POWER			
503 ⚠	.1-551-506-XX	(US,Canadian)...CORD, POWER			
503 ⚠	.1-556-560-00	(UK).....CORD, POWER			
504 ♦	;1-609-462-00	PC BOARD, MAIN			
505 ♦	;1-609-463-00	PC BOARD, MIC 1			
506 ♦	;1-609-464-00	PC BOARD, MIC 2			
507 ♦	;1-609-465-00	PC BOARD, PIN JACK			
508 ♦	;1-609-466-00	PC BOARD, EQ VOL			
509 ♦	;1-609-467-00	PC BOARD, MIX VOL			
510 ♦	;1-609-468-00	PC BOARD, SWITCH			
511 ♦	;A-4335-254-A	MOUNTED PCB			
C110	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C111	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C113	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C115	1-131-412-00	ELECT(SOLID)	0.47MF	10%	16V
C118	1-108-576-00	MYLAR	0.0075MF	5%	50V
C119	1-108-604-00	MYLAR	0.11MF	5%	50V
C122	1-108-562-00	MYLAR	0.002MF	5%	50V
C124	1-108-556-00	MYLAR	0.0011MF	5%	50V
C127	1-108-576-00	MYLAR	0.0075MF	5%	50V
C210	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C211	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C213	1-131-413-00	ELECT(SOLID)	1MF	10%	16V
C215	1-131-412-00	ELECT(SOLID)	0.47MF	10%	16V
C218	1-108-576-00	MYLAR	0.0075MF	5%	50V
C219	1-108-604-00	MYLAR	0.11MF	5%	50V
C222	1-108-562-00	MYLAR	0.002MF	5%	50V
C224	1-108-556-00	MYLAR	0.0011MF	5%	50V
C227	1-108-576-00	MYLAR	0.0075MF	5%	50V
C301 ⚠	.1-123-497-00	ELECT(ALMINIUM)	470MF	20%	25V
C302 ⚠	.1-123-497-00	ELECT(ALMINIUM)	470MF	20%	25V
C303 ⚠	.1-123-487-00	ELECT(ALMINIUM)	470MF	20%	16V
C304 ⚠	.1-123-487-00	ELECT(ALMINIUM)	470MF	20%	16V
C305 ⚠	.1-123-487-00	ELECT(ALMINIUM)	470MF	20%	16V
C306 ⚠	.1-123-487-00	ELECT(ALMINIUM)	470MF	20%	16V
C707	1-125-332-00	DOUBLE LAYERS	22000MF		10V
C801 ⚠	.1-161-744-00	(AEP,UK,E).....CAP, CERAMIC	10000PF		400V
C801 ⚠	.1-161-749-00	(US,Canadian)..CAP, CERAMIC	10000PF		125V
CNJ501	1-507-734-00	JACK, PIN 4P			
CNJ502	1-507-734-00	JACK, PIN 4P			
CNJ503	1-507-734-00	JACK, PIN 4P			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
⚠CNJ801	.1-526-609-00	(US,E).....CONNECTOR, AC OUTLET
⚠CNJ801	.1-526-694-00	(AEP).....OUTLET, AC
⚠CNJ801	.1-526-751-00	(UK).....OUTLET, AC
⚠CNJ801	.1-526-882-00	(Canadian)...OUTLET, AC
♦CNP701	;1-560-063-00	PIN, CONNECTOR 5P
♦CNP702	;1-560-062-00	PIN, CONNECTOR 4P
♦CNP703	;1-560-062-00	PIN, CONNECTOR 4P
♦CNP704	;1-560-060-00	PIN, CONNECTOR 2P
D301 ⚠	.8-719-200-02	DIODE 10E-2
D302 ⚠	.8-719-200-02	DIODE 10E-2
D303 ⚠	.8-719-200-02	DIODE 10E-2
D304 ⚠	.8-719-200-02	DIODE 10E-2
D305 ⚠	.8-719-101-76	DIODE RD10EL2
D306 ⚠	.8-719-101-76	DIODE RD10EL2
D601	8-719-907-26	DIODE GL-5PG21
D602	8-719-907-26	DIODE GL-5PG21
D603	8-719-907-26	DIODE GL-5PG21
D604	8-719-906-44	DIODE GL-5HY22
D605	8-719-907-26	DIODE GL-5PG21
D701	8-719-815-55	DIODE 1S1555
D702	8-719-815-55	DIODE 1S1555
D703	8-719-815-55	DIODE 1S1555
D704	8-719-101-34	DIODE RD3.0EL
D705	8-719-191-07	DIODE RD9.1EL
D706	8-719-101-38	DIODE RD3.6EL
D707	8-719-815-55	DIODE 1S1555
F301 ⚠	.1-532-203-00	(AEP)...FUSE 2.0A TIME LAG
F301 ⚠	.1-532-290-00	(E).....FUSE 80mA TIME LAG
IC101	8-759-145-57	IC UPC4557C
IC102	8-759-145-57	IC UPC4557C
IC103	8-759-145-57	IC UPC4557C
IC701	8-759-800-33	IC LC7815H
IC702	8-759-307-70	IC CX-770A
IC703	8-759-140-13	IC UPD4013BC
IC704	8-759-800-37	IC LC4066BH
J401	1-507-854-00	JACK, LARGE TYPE
J402	1-507-854-00	JACK, LARGE TYPE
Q101	8-729-245-83	TRANSISTOR 2SC2458
Q102	8-729-245-83	TRANSISTOR 2SC2458
Q103	8-729-245-83	TRANSISTOR 2SC2458
Q104	8-729-245-83	TRANSISTOR 2SC2458
Q105	8-729-245-83	TRANSISTOR 2SC2458
Q106	8-729-245-83	TRANSISTOR 2SC2458
Q107	8-729-245-83	TRANSISTOR 2SC2458
Q108	8-729-245-83	TRANSISTOR 2SC2458
Q109	8-729-245-83	TRANSISTOR 2SC2458

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q110	8-729-334-58	TRANSISTOR 2SC1345
Q201	8-729-245-82	TRANSISTOR 2SC2458
Q202	8-729-245-83	TRANSISTOR 2SC2458
Q203	8-729-245-83	TRANSISTOR 2SC2458
Q204	8-729-245-83	TRANSISTOR 2SC2458
Q205	8-729-245-83	TRANSISTOR 2SC2458
Q206	8-729-245-83	TRANSISTOR 2SC2458
Q207	8-729-245-83	TRANSISTOR 2SC2458
Q208	8-729-245-83	TRANSISTOR 2SC2458
Q209	8-729-245-83	TRANSISTOR 2SC2458
Q210	8-729-334-58	TRANSISTOR 2SC1345
Q301	8-729-177-32	TRANSISTOR 2SD773
Q302	8-729-373-92	TRANSISTOR 2SB739
Q701	8-729-201-52	TRANSISTOR 2SA1015
Q702	8-729-201-52	TRANSISTOR 2SA1015
Q703	8-761-710-00	TRANSISTOR 2SC1637-1
Q704	8-761-710-00	TRANSISTOR 2SC1637-1
R301 ⚠	.1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R302 ⚠	.1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R305 ⚠	.1-247-188-00	CARBON 4.7 5% 1/2W F
R306 ⚠	.1-247-188-00	CARBON 4.7 5% 1/2W F

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV101	1-228-225-00	RES, VAR, SLIDE 250K
RV102	1-228-225-00	RES, VAR, SLIDE 250K
RV103	1-228-225-00	RES, VAR, SLIDE 250K
RV104	1-228-225-00	RES, VAR, SLIDE 250K
RV105	1-228-225-00	RES, VAR, SLIDE 250K
RV106	1-228-225-00	RES, VAR, SLIDE 250K
RV107	1-228-225-00	RES, VAR, SLIDE 250K
RV108	1-228-225-00	RES, VAR, SLIDE 250K
RV109	1-228-225-00	RES, VAR, SLIDE 250K
RV110	1-228-942-00	RES, VAR, SLIDE 100K/100K
S601	1-554-303-00	SWITCH, KEY BOARD
S602	1-554-303-00	SWITCH, KEY BOARD
S603	1-554-303-00	SWITCH, KEY BOARD
S604	1-554-303-00	SWITCH, KEY BOARD
S605	1-554-303-00	SWITCH, KEY BOARD
S801 ⚠	.1-553-318-00	(AEP,E).....SWITCH, PUSH (AC POWER)
S801 ⚠	.1-553-319-00	(US,Canadian)...SWITCH, PUSH (AC POWER)
S801 ⚠	.1-553-447-00	(UK).....SWITCH, PUSH (AC POWER)
S901 ⚠	.1-552-535-00	(E).....SWITCH, POWER VOLTAGE CHANGE
T801 ⚠	.1-447-207-00	(US,Canadian)...TRANSFORMER, POWER
T801 ⚠	.1-447-208-00	(AEP,UK,E).....TRANSFORMER, POWER
♦TB301	;1-535-116-00	TERMINAL
♦TB302	;1-535-140-00	(AEP,UK)...BASE POST 19MM (10MM PITCH)

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SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers.

MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
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COILS
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The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

ELECTROLYTIC CAPACITORS

RATING → : Use the high voltage rated one.

CAP. (μF)	6.3 VOLT.	10 VOLT.	16 VOLT.	25 VOLT.	35 VOLT.	50 VOLT.
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.47					→	1-121-726-00
1.0					→	1-121-391-00
2.2					→	1-121-450-00
3.3	→	→	→	1-121-392-00	→	1-121-393-00
4.7	→	→	→	1-121-395-00	→	1-121-396-00
10	→	→	1-121-651-00	1-121-398-00	→	1-121-738-00
22	→	→	1-121-479-00	1-121-480-00	1-121-662-00	1-121-152-00
33	→	→	1-121-403-00	1-121-404-00	1-121-652-00	1-121-405-00
47	→	1-121-352-00	1-121-409-00	1-121-410-00	1-121-653-00	1-121-411-00
100	→	1-121-414-00	1-121-415-00	1-121-416-00	1-121-357-00	1-121-417-00
220	1-121-419-00	1-121-420-00	1-121-421-00	1-121-422-00	1-121-261-00	1-121-423-00
330	1-121-751-00	1-121-805-00	1-121-521-00	1-121-654-00	1-121-655-00	1-121-656-00
470	1-121-424-00	1-121-425-00	1-121-426-00	1-121-733-00	1-121-361-00	1-121-810-00
1000		1-121-736-00	1-121-245-00	1-121-657-00	1-121-388-00	1-123-061-00
2200	1-121-658-00	1-121-659-00	1-121-660-00	1-123-067-00	1-121-984-00	–
3300	1-121-661-00	1-123-075-00	1-123-071-00	–	–	–

CAP. (μF)	100 VOLT.	160 VOLT.	250 VOLT.	350 VOLT.
	PART No.	PART No.	PART No.	PART No.
0.47	–	–		–
1.0	1-123-249-00	1-123-252-00	1-123-003-00	1-121-168-00
2.2	1-123-250-00	1-123-026-00	–	1-123-028-00
3.3	1-121-995-00		1-123-004-00	1-123-006-00
4.7	1-123-255-00	1-121-246-00	1-121-759-00	1-123-007-00
10	1-121-126-00	1-121-999-00	1-123-254-00	1-123-008-00
22	1-121-996-00	1-123-253-00	1-123-005-00	1-123-022-00
33	1-121-997-00	1-121-757-00	–	
47	1-123-251-00	1-121-919-00	–	–
100	1-123-084-00	–		–

CERAMIC CAPACITORS

RATING

CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (pF)	50 VOLT.	CAP. (μF)	50 VOLT.
	PART No.		PART No.		PART No.		PART No.
0.5	1-101-837-00	22	1-102-959-00	150	1-101-361-00	0.001	1-102-074-00
0.75	1-101-586-00	24	1-102-960-00	160	1-101-367-00	0.0012	1-102-118-00
1.0	1-102-934-00	27	1-102-961-00	180	1-102-976-00	0.0015	1-102-119-00
1.5	1-101-576-00	30	1-102-962-00	200	1-102-977-00	0.0018	1-102-120-00
2.0	1-102-935-00	33	1-102-963-00	220	1-102-978-00	0.0022	1-102-121-00
3	1-102-936-00	36	1-102-964-00	240	1-102-979-00	0.0027	1-102-122-00
4	1-102-937-00	39	1-102-965-00	270	1-102-980-00	0.0033	1-102-123-00
5	1-102-942-00	43	1-102-966-00	300	1-102-981-00	0.0039	1-102-124-00
6	1-102-943-00	47	1-101-880-00	330	1-102-820-00	0.0047	1-102-125-00
7	1-102-944-00	51	1-101-882-00	360	1-102-821-00	0.0056	1-102-126-00
8	1-102-945-00	56	1-101-884-00	390	1-102-822-00	0.0068	1-102-127-00
9	1-102-946-00	62	1-101-886-00	430	1-102-823-00	0.0082	1-102-128-00
10	1-102-947-00	68	1-101-888-00	470	1-102-824-00	0.01	1-102-129-00
11	1-102-948-00	75	1-101-890-00	510	1-101-059-00	0.022	1-101-005-00
12	1-102-949-00	82	1-102-971-00	560	1-102-115-00	0.047	1-101-006-00
13	1-102-950-00	91	1-102-972-00	680	1-102-116-00		
15	1-102-951-00	100	1-102-973-00	820	1-102-117-00		
16	1-102-952-00	110	1-102-815-00				
18	1-102-953-00	120	1-102-816-00				
20	1-102-958-00	130	1-101-081-00				

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

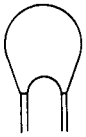
RATING → : Use the high voltage rated one.

CAP. (μF)	25 VOLT.	50 VOLT.	CAP. (μF)	25 VOLT.	50 VOLT.
	PART No.	PART No.		PART No.	PART No.
0.001	→	1-161-039-00	0.018	1-161-016-00	1-161-054-00
0.0012	→	1-161-040-00	0.022	1-161-017-00	1-161-055-00
0.0015		1-161-041-00	0.027	1-161-018-00	1-161-056-00
0.0018		1-161-042-00	0.033	1-161-019-00	1-161-057-00
0.0022		1-161-043-00	0.039	1-161-010-00	1-161-058-00
0.0027	→	1-161-044-00	0.047	1-161-021-00	1-161-059-00
0.0033	→	1-161-045-00	0.056	→	1-161-060-00
0.0039	→	1-161-046-00	0.068	→	1-161-061-00
0.0047	→	1-161-047-00	0.082	1-161-024-00	1-161-062-00
0.0056	→	1-161-048-00	0.1	1-161-025-00	1-161-063-00
0.0068	→	1-161-049-00			
0.0082	1-161-012-00	1-161-050-00			
0.01	1-161-013-00	1-161-051-00			
0.012	→	1-161-052-00			
0.015	1-161-015-00	1-161-053-00			

MYLAR CAPACITORS

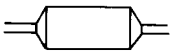
CAP. (μF)	RATING 50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.	CAP. (μF)	50 VOLT. PART No.	100 VOLT. PART No.	200 VOLT. PART No.
0.001	1-108-227-00	1-108-365-00	1-108-409-00	0.01	1-108-239-00	1-108-377-00	1-108-421-00	0.1	1-108-251-00	1-108-389-00	1-108-433-00
0.0012	1-108-351-00	1-108-366-00	1-108-410-00	0.012	1-108-357-00	1-108-378-00	1-108-422-00	0.12	1-108-363-00	1-108-390-00	1-108-434-00
0.0015	1-108-228-00	1-108-367-00	1-108-411-00	0.015	1-108-240-00	1-108-379-00	1-108-423-00	0.15	1-108-252-00	1-108-391-00	1-108-435-00
0.0018	1-108-352-00	1-108-368-00	1-108-412-00	0.018	1-108-358-00	1-108-380-00	1-108-424-00	0.18	1-108-364-00	1-108-392-00	1-108-436-00
0.0022	1-108-230-00	1-108-369-00	1-108-413-00	0.022	1-108-242-00	1-108-381-00	1-108-425-00	0.22	1-108-254-00	1-108-393-00	1-108-437-00
0.0027	1-108-353-00	1-108-370-00	1-108-414-00	0.027	1-108-359-00	1-108-382-00	1-108-426-00	0.27	1-108-854-00	–	–
0.0033	1-108-232-00	1-108-371-00	1-108-415-00	0.033	1-108-244-00	1-108-383-00	1-108-427-00	0.33	1-108-855-00	–	–
0.0039	1-108-354-00	1-108-372-00	1-108-416-00	0.039	1-108-360-00	1-108-384-00	1-108-428-00	0.39	1-108-856-00	–	–
0.0047	1-108-234-00	1-108-373-00	1-108-417-00	0.047	1-108-246-00	1-108-385-00	1-108-429-00	0.47	1-108-857-00	–	–
0.0056	1-108-355-00	1-108-374-00	1-108-418-00	0.056	1-108-361-00	1-108-386-00	1-108-430-00				
0.0068	1-108-237-00	1-108-375-00	1-108-419-00	0.068	1-108-249-00	1-108-387-00	1-108-431-00				
0.0082	1-108-356-00	1-108-376-00	1-108-420-00	0.082	1-108-362-00	1-108-388-00	1-108-432-00				

TANTALUM CAPACITORS



CAP. (μF)	RATING → : Use the high voltage rated one. 3.15 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	25 VOLT. PART No.	35 VOLT. PART No.
0.01					→	→	1-131-396-00
0.015						→	1-131-397-00
0.022						→	1-131-398-00
0.033						→	1-131-399-00
0.047						→	1-131-400-00
0.068					→	→	1-131-401-00
0.1					→	→	1-131-402-00
0.15					→	→	1-131-403-00
0.22					→	→	1-131-404-00
0.33					→	1-131-409-00	1-131-405-00
0.47	–	–	–	–	1-131-412-00	→	1-131-406-00
0.68	–	–	–	1-131-415-00	→	1-131-410-00	1-131-407-00
1.0	–	–	1-131-418-00	–	1-131-413-00	→	1-131-408-00
1.5	–	1-131-421-00	–	1-131-416-00	→	1-131-411-00	1-131-348-00
2.2	1-131-424-00	–	1-131-419-00	–	1-131-414-00	1-131-355-00	1-131-349-00
3.3	–	1-131-422-00	–	1-131-417-00	1-131-362-00	1-131-356-00	1-131-350-00
4.7	1-131-425-00	–	1-131-420-00	1-131-369-00	1-131-363-00	1-131-357-00	1-131-351-00
6.8	–	1-131-423-00	1-131-376-00	1-131-370-00	1-131-364-00	1-131-358-00	1-131-352-00
10	1-131-426-00	1-131-383-00	1-131-377-00	1-131-371-00	1-131-365-00	1-131-359-00	1-131-353-00
15	1-131-390-00	1-131-384-00	1-131-378-00	1-131-372-00	1-131-366-00	1-131-360-00	-
22	1-131-391-00	1-131-385-00	1-131-379-00	1-131-373-00	1-131-367-00		
33	1-131-392-00	1-131-386-00	1-131-380-00	1-131-374-00			
47	1-131-393-00	1-131-387-00	1-131-381-00	–			
68	1-131-394-00	1-131-388-00	–	-			
100	1-131-395-00	–	–	–			

TANTALUM CAPACITORS



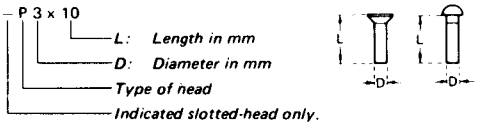
CAP. (μF)	RATING 3 VOLT. PART No.	6.3 VOLT. PART No.	10 VOLT. PART No.	16 VOLT. PART No.	20 VOLT. PART No.	35 VOLT. PART No.
0.033						1-131-273-00
0.047						1-131-274-00
0.068						1-131-275-00
0.1						1-131-276-00
0.15						1-131-277-00
0.22			–	–	1-131-262-00	1-131-278-00
0.33			–	–	1-131-263-00	1-131-279-00
0.47			1-131-169-00	–	1-131-264-00	1-131-280-00
0.68			–	1-131-258-00	1-131-265-00	1-131-281-00
1.0			1-131-254-00	–	1-131-266-00	1-131-282-00
1.5		1-131-250-00	–	–	1-131-267-00	1-131-283-00
2.2		–	–	1-131-259-00	1-131-268-00	1-131-284-00
3.3		–	1-131-255-00	–	1-131-269-00	–
4.7		1-131-251-00	1-131-171-00	–	1-131-270-00	–
6.8		–	–	1-131-260-00	1-131-271-00	–
10	–	–	1-131-256-00	–	1-131-272-00	–
15	–	1-131-252-00	–	1-131-261-00		
22		–	1-131-257-00	–		
33	1-131-176-00	1-131-253-00	1-131-173-00	–		
47	1-131-288-00	1-131-174-00	–	–		
100	1-131-177-00					

1/4 WATT CARBON RESISTORS

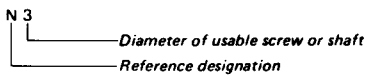
Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

Screw:



Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		brazier-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	